# REMARKS/ARGUMENTS

Claims 1-24 were previously pending in the application. Claims 1 and 17 are amended herein. Claims 1-24 remain pending in the application. The Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

## Allowable Subject Matter

On page 2 of the August 3, 2010, final Office Action, the Examiner indicated that claim 7 is directed to allowable subject matter and would be allowed if rewritten in independent form including all the limitations of the base claim and any intervening claims. The Office Action Summary, however, indicated claims 1-24 as rejected. In a telephonic Interview on September 14, 2010, the Examiner confirmed that (1) claim 7 is directed to allowable subject matter and (2) claims 8-10, which depend variously from claim 7, should also have been indicated as directed to allowable subject matter. In a follow-up voicemail message of September 15, in response to an inquiry by the Applicant, the Examiner confirmed that claims 21-23, which were rejected on grounds similar to the grounds previously provided for the rejection of claim 7, should also have been indicated as directed to allowable subject matter. In a follow-up telephonic Interview on September 22, 2010, the Examiner confirmed that claim 24, which depends from claim 21, should also have been indicated as directed to allowable subject matter. In addition, the Examiner indicated that an Interview Summary noting the above will be forthcoming.

## Prior-Art Rejections

On pages 2-4 of the August 3, 2010, final Office Action, the Examiner provided responses (the "Responses") to arguments previously made by the Applicant. In pages 4-8, the Examiner rejected claims 1-24 under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,904,462 to Sinha ("Sinha") in view of U.S. Pat. No. 7,046,665 to Walrand et al. ("Walrand"). Note that, as indicated above, the rejection should have been directed to claims 1-6 and 11-20. The Applicant notes that the Office Action referred to Walrand as U.S. Pat. No. 7,046,6_55_, which the Examiner, in a February 18, 2010 voicemail, confirmed was a typographical error.

For the following reasons, the Applicant submits that all of the pending claims are allowable over the cited references.

Claims 1 and 17

In rejecting claim 1, the Examiner argued that the proposed combination of Sinha and Walrand would disclose all the elements of claim 1. In the Responses, the Examiner apparently interpreted the limitation of "representing ... for each link in the network and each node or other link in the network" as "for (each link in the network) and ((each node) or (other link in the network))" rather than as "for each (link in the network) and each (node or other link in the network)," as intended. In order to remove this newly presented potential ambiguity, the Applicant has amended claims 1 and 17 to recite "representing ... for each link in the network and each node and each other link in the network...." The Applicant submits that, as indicated by the Specification, by the Applicant's previously submitted arguments, and by various of other claims, this has always been the intended meaning of this feature. Consequently, the Applicant submits that this amendment should be entered.

The Applicant submits that the cited references do not disclose all the recited features of amended claim 1. In particular, the Applicant submits that the cited references do not disclose the feature of "representing, in a network data structure, information associated with a mesh network ..., wherein the network data structure comprises, for each link in the network and each node and each other link in the network, a representation of a minimum amount of protection bandwidth required to be reserved on said each link to restore service upon failure of said each node or other link."

In the Responses, the Examiner objected to the Applicant's reference, in the arguments, to a data array that may represent the recited data structure as "subject matter not recited in the instant claim language." The Applicant agrees that claim 1 is not limited to a data array. The data array example was used in order to provide one example of an implementation of the recited data structure as part of a showing that the cited references do not provide any example of the recited data structure and, therefore, cannot be said to teach the recited data structure.

The Examiner asserted that Sinha teaches this element in several sections allegedly disclosing "where existing protection path bandwidth is allocated to a protection links." The Applicant notes that the Examiner did not indicate what particular element of Sinha the

Examiner believes allegedly corresponds to the claimed network data structure. The Applicant submits that, regardless, Sinha does <u>not</u> teach any element that corresponds to the claimed network data structure.

For a network having $L$ links and $N$ nodes, a corresponding network data structure would need to have, for each of the $L$ links and each of the $N$ nodes and $L$-1 other links in the network, a representation of a minimum amount of protection bandwidth required to be reserved on said each of the $L$ links to restore service upon failure of said each of the $N$ nodes and each of the $L$-1 other links. Consequently, the network data structure would need to be able to represent up to $L*(N+L$-1) different bandwidth data points.

The only vectors disclosed in Sinha are protection-link vectors, which, for a given link in a protection path, have elements corresponding to shared-risk groups (SRGs) in the network, where each element (i) corresponds to an SRG and (ii) represents the amount of bandwidth allocated by the corresponding link to protect all working connections containing at least one link from that SRG (*see, e.g.*, Sinha at column 2, line 65 – column 3, line 5). These vectors do <u>not</u> (a) individually make up units of a network data structure or (b) in aggregate, make up a network data structure.

*(a)*

The recited network data structure comprises information units corresponding to each link of the network, where each unit contains information corresponding to each <u>node</u> and each <u>other link</u> of the network. As noted above, a protection-link vector in Sinha contains elements corresponding to SRGs in the network. Sinha defines an SRG as "a group of <u>links</u> that will tend to fail collectively" (column 2, lines 51-52; emphasis added). Even if each link in the network belonged to its own SRG, no protection-link vector of Sinha would have <u>any</u> element corresponding to any <u>node</u> of the network and, therefore, would <u>not</u> have protection bandwidth information for any node. Consequently, it cannot be said that an individual protection-link vector of Sinha corresponds to an individual link information unit of the claimed network data structure.

*(b)*

Furthermore, an aggregation of protection-link vectors would <u>not</u> correspond to the recited network data structure. A network data structure may be represented as a two-dimensional $L$ by $(N+L$-1) data array that includes information for <u>all</u> the links and nodes of a

network. The only arguably-array-like aggregation of protection-link vectors taught in Sinha is the collection of protection-link vectors of a protection path. Since a given network having a protection path has a corresponding, different, and SRG-disjoint working path (*see, e.g.*, Sinha at column 3, line 60 – column 4, line 3, discussing discarding of potential protection links that are not SRG-distinct from the working path), the protection path will <u>not</u> contain the links of the working path it protects. In other words, the protection path <u>cannot</u> consist of <u>all</u> the links and nodes of the given network since it cannot include the links of the corresponding working path. As a result, the aggregation of protection-link vectors for a protection path <u>cannot</u> consist of $L$ link information units, where $L$ is the number of links in the given network. Consequently, it cannot be said that an aggregation of protection-link vectors of a protection path of Sinha corresponds to the claimed network data structure.

Therefore, the Applicant submits that Sinha does not teach the above-quoted requisite element of claim 1.

In view of the foregoing, the Applicant submits that claim 1 is allowable over the cited references. For similar reasons, the Applicant submits that claim 17 is also allowable over the cited references. Since claims 2-16 and 21-24 depend variously from claim 1, and claims 18-20 depend variously from claim 17, it is further submitted that those claims are also allowable over the cited references.

### Claims 12 and 16

The Applicant notes that, while the Examiner asserted that claim 12 recites "an incremental version of the network data structure," claim 12 actually recites "a compact version of the network data structure." Similarly, while the Examiner asserted that claim 16 recites "a compact version of the network data structure," claim 16 actually recites "an incremental version of the network data structure." The Applicant will regard the rejections as directed at the proper elements. The Applicant further notes that the Examiner did not address the Applicant's arguments regarding claims 12 and 16 in the Responses.

In rejecting claim 12, the Examiner asserted that the proposed combination of Sinha and Walrand would disclose all the elements of claim 12, including "a compact version of the network data structure." The Applicant submits that the cited references do not teach this feature.

The Examiner cited Sinha at column 2, lines 58-64, as specifically teaching this feature. The cited section discloses that one Sinha embodiment is designed to determine protection-path allocation to reduce designation of additional protection-path bandwidth. Neither the cited section nor any other section of Sinha discloses <u>anything</u> about a compact version of a network data structure. Consequently, it cannot be said that the proposed combination would teach the above-quoted feature.

Therefore, the Applicant submits that this provides further grounds for the allowability of claim 12 over the cited references. For similar reasons, the Applicant also submits that this also provides further grounds for the allowability of claim 16. Since claims 13-15 depend from claim 12, it is further submitted that this also provide further grounds for the allowability of those claims over the cited references.

### Claim 14

In rejecting claim 14, the Examiner asserted that the proposed combination of Sinha and Walrand would teach all the features of claim 14, including that "the compact representation is a node aggregate vector $V_{na}$ wherein each element of $V_{na}$ corresponds to a <u>node</u> in the network" (emphasis added). The Applicant submits that the proposed combination would not teach this feature. The Applicant notes that the Examiner did not address the Applicant's arguments regarding claim 14 in the Responses.

The Examiner cited Sinha at column 4, line 4 – column 5, line 9, as specifically allegedly teaching this feature. As noted above in reference to claim 1, Sinha does not teach <u>any</u> vector whose elements correspond to <u>nodes</u> in the network. However, the above-quoted feature requires that each element of the claimed vector correspond to a <u>node</u> in the network. Consequently, it cannot be said that the proposed combination teaches this feature of claim 14.

Therefore, the Applicant submits that this provides further grounds for the allowability of claim 14 over the cited references.

### Conclusion

In view of the above amendments and remarks, the Applicant believes that the pending claims are in condition for allowance. Therefore, the Applicant believes that the entire

application is now in condition for allowance, and early and favorable action is respectfully solicited.

Fees

During the pendency of this application, the Commissioner for Patents is hereby authorized to charge payment of any filing fees for presentation of extra claims under 37 CFR 1.16 and any patent application processing fees under 37 CFR 1.17 or credit any overpayment to **Mendelsohn, Drucker, & Associates, P.C. Deposit Account No. 50-0782.**

The Commissioner for Patents is hereby authorized to treat any concurrent or future reply, requiring a petition for extension of time under 37 CFR § 1.136 for its timely submission, as incorporating a petition for extension of time for the appropriate length of time if not submitted with the reply.

Respectfully submitted,

Date:     September 30, 2010          /Edward J. Meisarosh/

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